# Exhibit 2

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# Analysis of Registered Voters and
# Illustrative Irving City Council District

Expert Report of David Ely

Pursuant to 28 U.S.C. sec. 1746, I declare the following:

## I. Introduction

1.    I, David Ely, am the founder of Compass Demographics, a consulting and database management firm specializing in projects involving Census and Election Data. I have extensive experience in the management of redistricting projects, the analysis of voting behavior, and demographic analysis. I received a Bachelor of Science in Mechanical Engineering and Social Sciences from the California Institute of Technology in 1987.

2. I served as an expert and testified on behalf of the United States in Garza v. County of Los Angeles, 756 F. Supp. 1298, 1328-37 (C. D. Cal.), aff'd, 918 F.2d 763 (9th Cir. 1990), cert. denied, 498 U.S. 1028 (1991), where I constructed databases and designed remedial plans for the Los Angeles County Supervisorial Districts.

3. I served as an expert and filed a report on behalf of the United States in United States v. City of Lawrence (Massachusetts) in 1999, where I performed Spanish surname matching and geocoding of registered voter lists and constructed illustrative districting plans.

4. I served as an expert and filed a report on behalf of the United States in United States v. City of Passaic (New Jersey) in 2000, where I performed surname matching and geocoding of registered voter and other lists and constructed illustrative districting plans.

5. I served as an expert and filed a report on behalf of the United States in United States v. Upper San Gabriel Valley Municipal Water District in 2000, where I constructed election data sets and illustrative districting plans.

6. I served as an expert and filed a report on behalf of the United States in United States v. City of Santa Paula (California) in 2001, where I performed Spanish surname matching and geocoding of registered voter and actual voter lists and constructed illustrative districting plans.

7. I have also served as a consultant and expert in voting rights litigation challenging at-large city council election systems in the Cities of Santa Maria, California and Modesto, California and the legality of a city council ward plan in the City of Chicago, Illinois. I was deposed and testified in court in the Santa Maria case.

8. I have also served as a consultant to construct databases, draw district lines or prepare presentation maps and reports for the following reapportionments: City of Boston, 1987; California Congressional and State Assembly Districts, 1991; Los Angeles County Board of Supervisors, 1991; Los Angeles City Council, 1992; Los Angeles Unified School District, 1992; Pasadena City Council, 1992; Oakland City Council, 1993; Rancho Mirage City Council, 1993; California Legislative Districts, 2001; Los Angeles County Board of Supervisors, 2001; the Bay Area Rapid Transit Board Member Districts, 2001; Los Angeles City Council, 2002; Los Angeles Unified School District, 2002; Pasadena City Council, 2002; Oakland City Council, 2003.

9. I was asked to perform the following analyses related to the City of Irving, Texas:

A. Identify Spanish surnamed voters from a list of voters for the Irving City Council elections in 2002, 2005, and 2008;

B. Combine counts of voters and Spanish surnamed voters by precinct with election returns

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for Irving City Council elections;

C. Construct an illustrative single member city council district with one eighth of the population of the City of Irving;

D. Estimate citizenship status based on census data for the illustrative district.

10. This report may be supplemented or revised in response to the discovery of additional issues and information.

11. I am being compensated at a rate of $150 per hour by Plaintiff's attorney for my analysis in this case.

## II. Spanish Surname Matching

12. A Spanish surname is a commonly used proxy for Hispanic ethnicity in determining the ethnic composition of a group of people identified by name, when ethnic self identification is not practical. I have used this type of analysis extensively to build databases for use in the analysis of voting behavior as well as to measure potential voting strength in districts. I and others have used Spanish surname databases as the foundation for numerous expert reports in voting rights litigations, as well as to provide important criteria to guide decisions by jurisdictions in the redistricting process.

13. A Spanish surname list and rules for matching the list were developed by the Census Bureau for use in the 1980 Census. I have utilized this list and set of rules in my surname matching analysis. Studies by the Census Bureau have shown that surname matching tends to slightly underestimate Hispanic ethnicity, except in groups with significant Filipino populations. Jeffrey S. Passel and David R. Word, "Constructing the List of Spanish Surnames for the 1980 Census: An Application of Bayes' Theorem," presented at the Annual Meeting of the Population Association of America, 1980. 2000 Census data for the City of Irving indicate that there is a minimal Filipino population in the city, so Spanish surname results may be accepted as a reliable, if somewhat conservative, indication of Hispanic ethnicity.

14. Each of the voters on the list was coded to indicate if the voter had a Spanish surname according to Census Bureau rules. This information was then aggregated to the precinct level in order to produce a count for each precinct of total voters and Spanish surnamed voters for each election.

15. The surname matching procedure was carried out on a voter list, which indicated voting participation in several City Council elections. It is my understanding that this list had all voters who voted in these elections, assigned to current precincts. In order to produce a data file for election analysis I combined counts of 2008 voters with precinct by precinct election results downloaded from the Dallas County Elections Website (http://www.dalcoelections.org/). Data were aggregated by voting precinct. This aggregation was necessary because, although both the

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election returns and the voter list show a subdivision of voting precincts. I did not have sufficient information to maintain the subdivisions. The precincts that were in effect for the 2005 election differ slightly from those in the current voter list supplied by Dallas County. The differences appear to consist of the reconfiguration of three precincts in 2005 (4642, 4643, 4644) into four precincts in 2008 (4642, 4643, 4644, 4651). Since I did not have detailed information about this reconfiguration of precincts, the voter counts and election returns for these precincts were merged into a single unit that I designated as 4642A. The difference in precincts for the 2002 election was too significant for me to merge data with the information available to me. If I am subsequently able to obtain additional information, these data sets will be recreated and the report updated.

The citywide results from the Spanish surname analyses of the voter lists are shown below in Table 1.

**Table 1.** Total Voters By Year

|  | Total | Spanish Surname |
|---|---|---|
| **2008** | 9823 | 957 |
| **2005** | 9014 | 497 |
| **2002** | 2741 | 173 |

## III. Illustrative District

16. I was asked to draw an illustrative district for an eight member City Council with a single member district configuration ("Illustrative District"). The Illustrative District is intended to demonstrate that a geographically compact district in which Hispanics make up a majority of the eligible voters can be drawn in the City of Irving that will maintain the integrity of areas of Hispanic population concentration.

17. In drawing the Illustrative District, I have used easily recognizable boundaries, such as streets. I have used undivided census blocks as the basic units to form the Illustrative District, thus permitting the use of the 2000 Census PL94-171 redistricting data file as the population reference. The Illustrative District is within 1% of the ideal population for a council district, based on 2000 Census data.

18. A map of the Illustrative District is attached as Appendix A. Table 2 shows total population, voting age population, and the Hispanic share of each, for the Illustrative District. This table makes clear that it was possible for Hispanics to comprise a super-majority of overall population and voting age population in one of eight districts as early as 2000.

### Table 2. Illustrative District Demographics

|  | Population | Deviation | % Deviation | Hispanic Population | Hispanic % of Population | Voting Age Population | Hispanic Voting Age Population | Hispanic % of Voting Age Population |
|---|---|---|---|---|---|---|---|---|
| District | 23760 | -192 | -0.8% | 15942 | 67.1% | 15942 | 10107 | 63.4% |
| City | 191615 |  |  | 59838 | 31.2% | 143397 | 39011 | 27.2% |

19. I used data from the 2000 Census SF4 data-set, Table PCT44: **Age by Sex by Citizenship Status**, to compute citizenship rates for Hispanic and non-Hispanic populations

under 18 and over 18 at the city and census tract levels.  Table 3 shows this data for the City of Irving.

**Table 3.** 2000 Citizenship in Irving

| | Total | Share of Total | Citizen | Citizenship Rate | Share of Total |
|---|---|---|---|---|---|
| **Total Population** | | | | | |
| Total: | 191,611 | | 151,177 | 78.9% | |
| Under 18 years: | 48,122 | | 42,523 | 88.4% | |
| 18 years and over: | 143,489 | | 108,654 | 75.7% | |
| **Hispanic or Latino (of any race)** | | | | | |
| Total: | 59,932 | 31.3% | 33,084 | 55.2% | 21.9% |
| Under 18 years: | 20,861 | 43.4% | 16,878 | 80.9% | 39.7% |
| 18 years and over: | 39,071 | 27.2% | 16,206 | 41.5% | 14.9% |
| **Not Hispanic or Latino** | | | | | |
| Total: | 131,679 | 68.7% | 118,093 | 89.7% | 78.1% |
| Under 18 years: | 27,261 | 56.6% | 25,645 | 94.1% | 60.3% |
| 18 years and over: | 104,418 | 72.8% | 92,448 | 88.5% | 85.1% |

20.  The citizenship rates calculated at the census tract level were applied to the appropriate categories for census block data in order to produce estimates of citizenship status in the Illustrative District.  The results of this analysis are shown below in Table 4.

**Table 4.** 2000 Citizenship in Illustrative District

| Citizens | Total | Hispanic | % Hispanic |
|---|---|---|---|
| **Total** | 14860 | 7691 | 51.8% |
| **Under 18** | 6376 | 4537 | 71.2% |
| **18 and Over** | 8484 | 3153 | 37.2% |

21.  The Census Bureau provides 2006 data for the City of Irving in the form of its 2006 American Community Survey.  The data found in Tables B05003 and B05003I of the 2006 American Community Survey are comparable to that found in Table PCT44 of the 2000 Census SF4 data-set.  Table 5 shows 2006 citizenship rates for the City of Irving.  A comparison of Table 3 and Table 5 shows a dramatic increase in both the number and share of Hispanic voting age

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citizens between 2000 and 2006. Comparing these tables, I have calculated an annual growth rate for Hispanic voting age citizens of 4.4 percent, while non-Hispanic voting age citizens have actually *declined* at the rate of 2.2 percent.

**Table 5.** 2006 Citizenship in Irving

|  | TOTAL | SHARE OF TOTAL | CITIZEN | CITIZENSHIP RATE | SHARE OF TOTAL |
|---|---|---|---|---|---|
| **Total population** |  |  |  |  |  |
| Total: | 205,920 |  | 152,819 | 74.2% |  |
| Under 18 years: | 55,942 |  | 50,793 | 90.8% |  |
| 18 years and over: | 149,978 |  | 102,026 | 68.0% |  |
| **Hispanic or Latino population** |  |  |  |  |  |
| Total: | 85,960 | 41.7% | 46,273 | 53.8% | 30.3% |
| Under 18 years: | 29,151 | 52.1% | 25,199 | 86.4% | 49.6% |
| 18 years and over: | 56,809 | 37.9% | 21,074 | 37.1% | 20.7% |
| **Not Hispanic** |  |  |  |  |  |
| Total: | 119,960 | 58.3% | 106,546 | 88.8% | 69.7% |
| Under 18 years: | 26,791 | 47.9% | 25,594 | 95.5% | 50.4% |
| 18 years and over: | 93,169 | 62.1% | 80,952 | 86.9% | 79.3% |

22. I have applied the annual growth rates calculated above to estimate the 2008 voting age citizenship in the Illustrative District. Table 6 shows the estimate of 2008 voting age citizens in the Illustrative District.

**Table 6.** 2008 Citizenship Estimate in Illustrative District

| Voting Age Citizens | 2000 | 2008 | 2008 Share of Total |
|---|---|---|---|
| Hispanic | 3153 | 4476 | 50.1% |
| Non-Hispanic | 5330 | 4465 | 49.9% |
| Total | 8484 | 8941 |  |

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23. My analysis demonstrates that it is possible to create a single member district in the City of Irving in which Hispanics currently comprise a majority of eligible voters. In 2000, the Illustrative District had a super-majority of Hispanic population and voting age population, as well as a majority of the citizen population. A comparison of the 2000 and 2006 figures for Hispanic citizen voting age population in the City of Irving showed an astonishingly rapid rise in the Hispanic share of the citizen voting age population. Analysis of this trend, when applied to the Illustrative District, indicates that Hispanics currently comprise a majority of the voting age citizens in the Illustrative District.
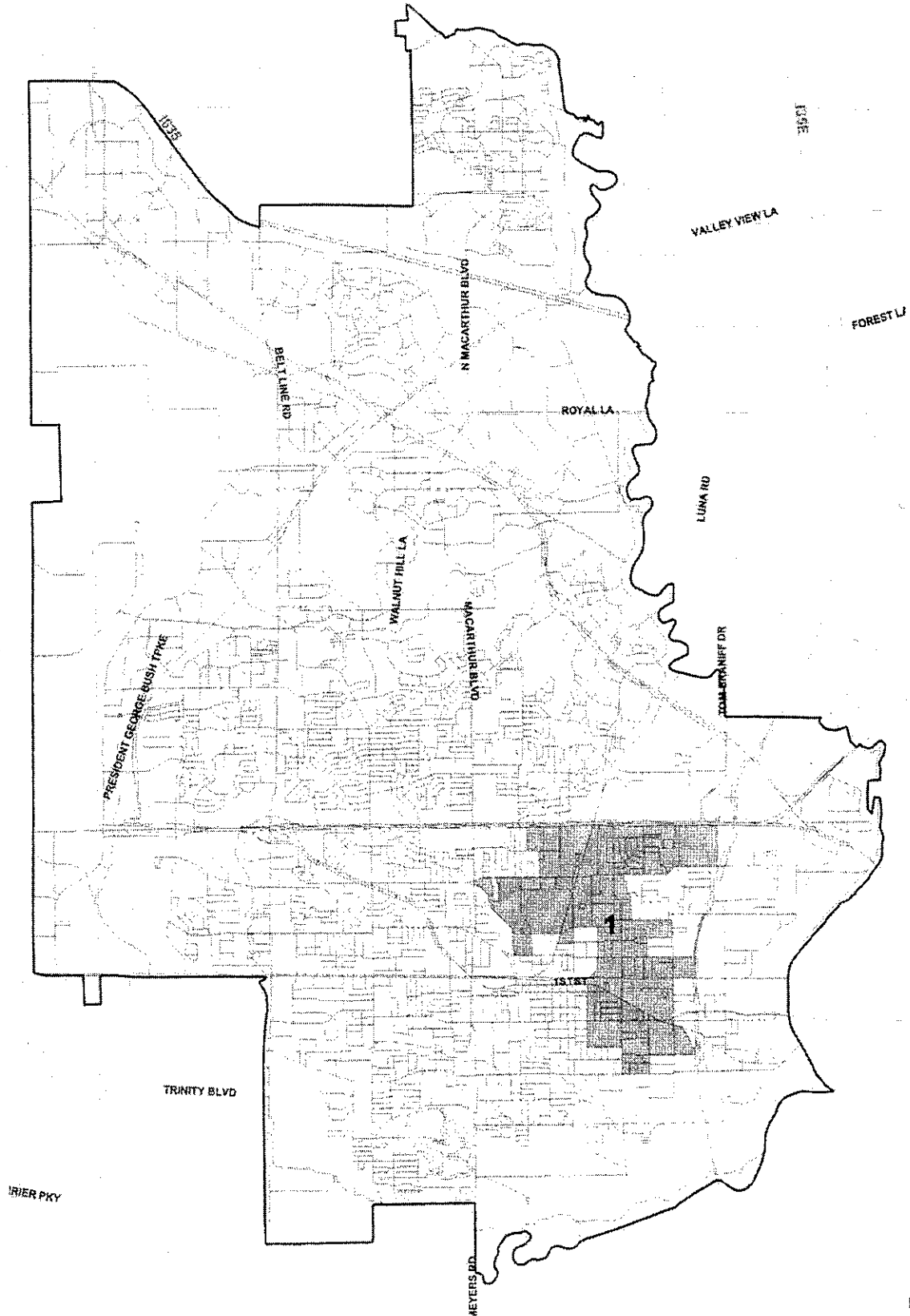
24. Pursuant to 28 U.S.C. 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on July 7, 2008.

David Ely

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# Appendix A